



IN THE UNITED STATES PATENT AND TRADEMARK OFFICE  
BEFORE THE BOARD OF PATENT APPEALS AND INTERFERENCES

In re application of

Helmut FITZ et al.

Serial No. 10/038,910

Filed January 8, 2002

: Confirmation No. 1343

: Docket No. 2002-0004A

: Group Art Unit 3683

: Examiner Devon C. Kramer

BRAKING- AND DAMPING DEVICE, IN  
PARTICULAR FOR MOVABLE PIECES OF  
FURNITURE

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**BRIEF ON APPEAL**

Commissioner for Patents  
P.O. Box 1450  
Alexandria, VA 22313-1450

Sir:

Appellants hereby present their Brief on Appeal pursuant to the Notice of Appeal filed February 2, 2004. The fee set forth in 37 CFR 1.17(c) accompanies this Brief.

**REAL PARTY IN INTEREST**

The real party in interest in this application is Julius Blum Gesellschaft m.b.h. of Industriestrasse 1, A-6973 Höchst, Austria.

**RELATED APPEALS AND INTERFERENCES**

There are no other known Appeals or Interferences that will directly affect or be directly affected by or have a bearing on the Board's decision in this Appeal.

**STATUS OF CLAIMS**

Claims 1-21 are canceled.

Claims 22-50 are pending.

Appeal is taken of the rejection of claims 22, 32-35, 42-45 and 47-50, as claims 23-31 and 37-41 have been withdrawn from consideration, and claims 36 and 46 have been indicated by the Examiner as containing allowable subject matter.

### **STATUS OF AMENDMENTS**

An Amendment was filed at the same time as this Brief to comply with formal requirements made in the final Office Action of October 31, 2003. These formal requirements included a restatement of the claims in proper order and including a proper indication of the cancellation of claims 1-21. They further included a re-presentation of the substitute specification and abstract in view of the fact that the abstract was not previously on a separate sheet.

### **SUMMARY OF THE INVENTION**

The invention will be described with reference to the substitute specification. Generally, the invention relates to a braking and damping device, in particular for movable pieces of furniture, which has a fluid-cylinder in which two pistons are arranged in a linearly displaceable manner.

As described in the second paragraph one page 1 of the specification, braking and damping devices are increasingly used with furniture to prevent a door of the piece of furniture being slammed shut to forcefully or a drawer being closed with too much force and from hitting the end wall of the furniture frame. The oldest damping devices were formed from simple rubber buffers. More recently, pneumatic and hydraulic braking and damping devices have been used. In the case of fluid damping devices, i.e. pneumatic or hydraulic damping devices with a linearly movable piston, with high speeds or large volumes the damping effect of the fluid may be insufficient to brake the moving piece of furniture adequately.

As described at the bottom of page 1 of the specification under the heading "Summary of the Invention", the aim of the invention is to create a pneumatic or hydraulic braking and damping device with improved sealing between the piston and cylinder wall and in which spring-back during braking due to a cushion of air or fluid is avoided.

As noted at the bottom of page 1, the invention addresses the problems of the prior art by providing an elastically deformable sealing member between two pistons which, when damping occurs, is deformed by being squeezed between the two pistons and pressed against the cylinder wall.

With the elected embodiment of Figs. 7 and 9, an elastically deformable sealing member is formed by a solid body 18 made of rubber elastic material. Projection 27 anchors the body 18 in a recess 26 in a piston 2. Piston 2 is connected to a piston rod 3. A piston 5 is connected to the body 18 at the other end of the body 18. Note the description beginning at the bottom of page 4 of the specification, i.e. at line 25.

Noting the description beginning at line 1 of page 5, during a damping operation the piston 2 is pressed into the cylinder 1 by piston rod 3. A solid body 18 is compressed between piston 2 and piston 5 and pressed against cylinder wall 7 as shown in Fig. 7. Thus, in addition to damping caused by fluid in the cylinder, damping caused by friction also takes place.

With this embodiment, a seal 30 may be provided with the piston 2 to bear against the cylinder wall to increase resistance to fluid in the cylinder 1.

## ISSUES

The basic issue in this Appeal is whether the cited U.S. Patent to Smalley, directed to a hitch for use in towing vehicles, properly anticipates each of claims 22, 32-35, 42-45 and 47-50 as alleged by the Examiner in section 5 beginning on page 3 of the final Office Action.

As part of such consideration, this general issue includes the issues of whether the Examiner may properly consider various structural components of the hitch of Smalley to correspond to the fluid cylinder, the piston and other structure recited in the various independent and dependent claims.

## GROUPING OF CLAIMS

While the Examiner rejected all of claims 22, 32-35, 42-45 and 47-50 as being anticipated by Smalley, U.S. Patent 3,904,226 (Smalley), the claims in this group do not stand or fall

together. Claims 22 and 32 are separately argued. Claim 33 stands or falls with claim 32. Claims 34, 35, 42, 43, 44, 45, 47, 48 and 49 are all also separately argued. Claim 53 stands or falls with claim 43.

## ARGUMENT

### CLAIMS 22, 32-35, 42-45 AND 47-50 ARE NOT ANTICIPATED BY SMALLEY

The rejections of each of the claims discussed as being argued separately in the grouping of the claims are discussed below under separate headings. As the U.S. patent to Smalley, the only patent cited by the Examiner in rejecting the claims, applies to each of these discussions, a discussion of this patent and its disclosure is appropriate before beginning a direct comparison between the individual claims and Smalley.

### THE SMALLEY PATENT

The Smalley patent is directed to a hitch that is used in towing vehicles. As described in the objects of the invention, the hitch is a drawbar hitch that is primarily used with farm or similar vehicles where heavy trailers and similar vehicles are to be towed by a tractor or truck. The primary purpose is to reduce or eliminate ordinary damage caused by towing due to sudden starts and stops.

The hitch is designated by reference number 3 and includes a rectangular base or mounting member 4 enabling the hitch to be bolted to a bumper 2. Note Fig. 1 and Fig. 2.

A tubular housing 6 is positioned on the base 4 by welding. A load transfer element 10 extends transversely across the tubular housing 6, is of washer-like construction and fastened by welding about its periphery to the interior of the housing 6 as described at the top of column 2.

A rod-like member serves as an adjusting part 12 and is fastened at one end to a connector 13 by welding at 15, and at the other end to a nut 17.

So-called restricting means 18 and 19a, in the form of washer-like parts similar to the load transfer element 10, are provided. The part 19a is fastened to the connector 13 by welding and the restricting means 18 is free to be moved under the action of the nut 17.

A pair of bushings 21 and 22 formed of polyurethane, such as neothane from Goodyear Tire and Rubber Company, which are substantially identical, are arranged in complimentary manner on either side of the load transfer element 10. As shown in Fig. 2 the bushings are not under compression. They could be placed under compression as shown by Fig. 4 by tightening the nut 17, as illustrated. Note column 2, lines 43-58. As discussed in the last paragraph of column 2, a drawbar pull of 1,000 lbs deflects the assembly as suggested possibly in Fig. 5. That is, the bushing 21 is depressed between restricting means 18 and load transfer element 10, which transfers the load from the connector 13 through the part 12 and nut 17 to the restricting means 18, and then from the bushing 21 to the load transfer element 10, the tube 6 and then the truck itself. As described at the top of column 3, with this deflection the bushing has substantially filled and is in complete engagement with the interior of the tubular housing 6. The bushing 22 is in what may be termed a completely relaxed condition.

#### CLAIM 22 IS NOT ANTICIPATED BY SMALLEY

Claim 22 requires a braking and damping device that includes a fluid cylinder having a cylinder wall. The claim further requires two pistons that are arranged so as to be linearly displaceable in the fluid cylinder. The claim further requires a piston rod for displacing one of the two pistons in the fluid cylinder. An elastically deformable sealing member, furthermore, is recited as being arranged between the two pistons such that when damping occurs by the piston rod displacing the one of the two pistons in the fluid cylinder, the elastically deformable sealing member is squeezed between the two pistons and pressed against the cylinder wall.

In order for Smalley to anticipate claim 22, each and every element as set forth in claim 22 must be found, either expressly or inherently, described in the Smalley patent. *Verdegaal Bros. v. Union Oil Co. of California*, 814 F.2d 628, 631, 2 USPQ2d 1051, 1053 (Fed. Cir. 1987). MPEP §2131. With respect to claim 22, Smalley does not include a fluid cylinder, does not include two pistons, does not include a sealing member, and particularly does not include a sealing member arranged between the two pistons so that when damping occurs by the piston rod displacing the

one of the two pistons in the fluid cylinder, the elastically deformable sealing member is squeezed between the two pistons and pressed against the cylinder wall.

In the final Office Action, the Examiner takes the position that Smalley provides a device having a fluid cylinder. However, there is no fluid cylinder in Smalley. Element number 6 is simply a tubular housing 6, and not a fluid cylinder. The Examiner takes the position on page 4 of the Office Action, in response to Appellants' arguments, that "air is present within the 'housing' or cylinder of Smalley and therefore is considered a fluid cylinder by the Examiner." This is respectfully submitted to be an improper and incorrect interpretation of the claim language.

While the Examiner is required to give the claims their broadest reasonable interpretation, that interpretation must, as stated, be reasonable. The broadest reasonable interpretation of the claims must be consistent with the interpretation that those skilled in the art would reach. *In re Cortright*, 165 F.3d 1353, 1359, 49 USPQ2d 1464, 1468 (Fed. Cir. 1999). MPEP §2111. As noted, the claims must be interpreted as broadly as their terms reasonably allow. This means that the words of the claim must be given their plain meaning unless Appellant has provided a clear definition in the specification. *In re Zletz*, 893 F.2d 319, 321, 13 USPQ2d 1320, 1322 (Fed. Cir. 1989); *MSM Investments Co. v. Carolwood Corp.*, 259 F.3d 1335, 1339-40, 59 USPQ2d 1856, 1859-60 (Fed. Cir. 2001). MPEP §2111.01. Furthermore, the plain meaning refers to the meaning that is given to the term by those of ordinary skill in the art. *Rexnord Corp. v. Laitram Corp.*, 274 F.3d 1336, 1342, 60 USPQ2d 1851, 1854 (Fed. Cir. 2001).

With the above in mind, it is respectfully submitted that the Examiner cannot interpret the tubular housing 6 of Smalley as a fluid cylinder. A fluid cylinder, to one of ordinary skill in the art, is a cylindrical body or space that forms a chamber in which a piston or similar element can work on a fluid. To accept the Examiner's interpretation means that any cylindrical body that exists outside of a vacuum is a fluid cylinder. In other words, it ignores the modifier "fluid" with respect to the cylinder and the meaning that this connection of the two terms gives to those of ordinary skill in the art.

This is even more so the case with respect to the terms "piston" which pistons are recited as being arranged to be linearly displaceable in the fluid cylinder. In its most common definition,

cited from Merriam-Webster Online (<http://www.m-w.com>), the word "piston" means "a sliding piece moved by or moving against fluid pressure which usually consists of a short cylinder fitting within a cylindrical vessel along which it moves back and forth." From the above discussion of Smalley, it is clear that neither elements 18 nor 19a nor the load transfer element 10 is a piston. None of these act against fluid pressure. Elements 18 and 19a are washers that sandwich the bushings 21 and 22 therebetween as part of the hitch. They are not moved by and do not move against fluid pressure, and are thus not pistons. This is even more so the case with element 10. Element 10 does not move relative to tubular housing 6, but is welded thereto, as discussed above. Thus, under the plain and ordinary meaning of the word "piston", none of elements 18, 19a or 10 are a piston. One of ordinary skill in the art would not read or interpret either of the washers 18 or 19a or the element 10 as a piston as that term is ordinarily used by those of ordinary skill in the mechanical arts. Interpreting these elements as a piston is thus submitted to quite clearly be unreasonable.

The Examiner cites Smalley as having an elastically deformable sealing member 21. However, it is not a sealing member, as it does not have any function of sealing. Its function is simply as a damping member during towing.

Furthermore, the bushing 21 is not arranged between the two pistons such that when damping occurs by the piston rod displacing the one of the two pistons in the fluid cylinder, the elastically deformable sealing member is squeezed between the two pistons and pressed against the cylinder wall. As noted above, the members 18, 19a and 10 are not pistons. But even if, for example, member 18 of Smalley is considered a piston, because it moves, bushing 21 would then be squeezed between washer 18 and fixed element 10. Even if, for purposes of argument, this interpretation were adopted, the elastically deformable sealing member of the bushing 21 would not be squeezed between two pistons, but between a fixed wall of the "cylinder" and the "piston."

In the Examiner's response to Appellants' arguments, the Examiner argues that the members of Smalley can be read as pistons because they move within a cylinder and are attached to a rod. However, as discussed above, the members 18 and 19a are not moved by or moved against fluid pressure, and thus would not be considered to be a piston by those of ordinary skill in

the art. In other words, they would not be considered pistons under the plain meaning of the term. Indeed, it is clear from the operation that this is not their function. Further, even if such members 18 and 19a were considered to be pistons, element 10 is not a member that moves within a cylinder. Nor is it attached to rod 12. As such, this element is even more remote from the possibility of being considered a piston. For this reason alone the claim language of claim 22 distinguishes over Smalley.

#### CLAIM 32 FURTHER DISTINGUISHES OVER SMALLEY

Claim 32, dependent directly from claim 22, further recites that the cylinder wall comprises axially extending grooves positioned so as to permit the passage of a pneumatic medium when the two pistons are disposed in a front end position of the cylinder. No such features are disclosed or suggested by Smalley. This is especially the case because Smalley is unconcerned with the passage of a fluid medium therethrough, because Smalley is not providing a fluid cylinder, but a tubular housing 6 for a hitch.

The Examiner took the position that Smalley provides axially extending grooves or passages capable of permitting the passage of pneumatic medium. The Examiner noted that the spaces between the elastomer and the cylinder wall are being read as grooves. This is respectfully submitted to be improper. Smalley has no grooves or any feature that could be considered a groove. There may be a space around the bushings 21 and 22, but from what one can tell from Smalley, it would be annular spacing, and not in the form of grooves. Nor would such grooves be part of the cylinder wall as required by claim 32. Thus the Examiner's position is clearly without merit, as Smalley is clearly completely silent with respect to this feature. In other words, the Examiner's interpretation of a space around the bushings 21 and 22 is an unreasonably broad reading of the language and against the plain meaning of the claim terminology.

#### CLAIM 34 FURTHER DISTINGUISHES OVER SMALLEY

Claim 34 is also dependent from claim 22. This claim further recites that a second of the two pistons comprises a seal which seals with the cylinder wall of the cylinder. To address this

limitation the Examiner simply states that Smalley provides a piston that is opposite to the piston with the piston rod as provided with a seal that seals the cylinder wall. However, assuming for purposes of argument that washer 18 is a first piston and element 19a is a second piston, then the "elastically deformable sealing member" 21 is not squeezed between the two pistons, but between washer 18 and fixed element 10. If the second piston is considered the fixed element 10, this second of the two pistons does not itself have a seal. If bushing member 22 is considered the seal required by claim 34, this is respectfully submitted to be an improper interpretation. Element number 22 is a bushing provided for the purpose of damping, and is not provided to seal tubular housing 26.

#### CLAIM 35 FURTHER DISTINGUISHES OVER SMALLEY

Claim 35 requires the sealing member (the elastically deformable sealing member recited in claim 22) to comprise a solid body made of a rubber elastic material that connects the two pistons. If washer 18 and washer 19a are considered the two pistons, then Smalley has no solid body made of a rubber elastic material that connects the two pistons.

#### INDEPENDENT CLAIM 42 FURTHER DISTINGUISHES OVER SMALLEY

Independent claim 42 includes all of the same limitations as independent claim 22. Accordingly, claim 42 distinguishes over Smalley for the same reasons as are applicable with respect to claim 22.

Claim 42, however, further recites in the preamble that the braking and damping device is for a piece of furniture. Claim 42 further recites "said fluid cylinder being mounted on the piece of furniture." Claim 42 further recites "said piston rod being positioned so as to be engageable by a movable part of the piece of furniture." In other words, claim 42 recites the environment of a piece of furniture for the braking and damping device.

The Examiner addresses claim 42 by stating that "Smalley provides a braking and damping device for a piece of furniture." This is respectfully submitted to clearly be incorrect, as Smalley provides a hitch for towing a vehicle.

The Examiner further cites the cylinder as capable of being mounted to a piece of furniture. Even if one considered that the hitch of Smalley could be mounted to a piece of furniture, note that claim 42 requires that the fluid cylinder is mounted on a piece of furniture. Such is not the disclosure of Smalley.

Accordingly, it is respectfully submitted to be clear that claim 42 further distinguishes over Smalley because claim 42 requires the fluid cylinder to be mounted on the piece of furniture, placing the braking and damping device in its intended environment, and even further distinguishing over Smalley.

#### CLAIM 43 FURTHER DISTINGUISHES OVER SMALLEY

Claim 43 recites similar limitations to those of claim 22, and is considered to distinguish over Smalley for the same reasons as are applicable with respect to claim 22. However, the claim modifies some of the limitations to even further distinguish over Smalley.

Claim 43 recites that the second piston is disposed opposite to the first piston and has a seal sealing the second piston with respect to the cylinder wall. Thus claim 43 further distinguishes over Smalley for the same reasons as were discussed above with respect to claim 34.

Claim 43 further recites the elastically deformable member as an elastically deformable friction braking member that is arranged between a first piston and a second piston so that when the damping occurs by the piston rod displacing the first piston in the fluid cylinder, the elastically deformable friction braking member is deformed by being squeezed between the first piston and the second piston and pressed against the cylinder wall so as to cause damping caused by friction in addition to damping caused by fluid damping. Accordingly, in addition to the reasons as were discussed above with respect to claim 22, the structure of an elastically deformable friction braking member as recited in claim 43 is not found in Smalley. Smalley has no disclosure or suggestion of any structure causing the squeezing of an elastically deformable friction braking member between first and second pistons to press the member against the cylinder wall so as to cause damping caused by friction in addition to damping caused by fluid damping.

#### CLAIM 44 FURTHER DISTINGUISHES OVER SMALLEY

Claim 44 depends from claim 43, and further distinguishes over Smalley for the same reasons as are applicable with respect to claim 43. It further recites axially extending grooves, and further distinguishes over Smalley for the same reasons as are applicable with respect to claim 32.

#### CLAIM 45 FURTHER DISTINGUISHES OVER SMALLEY

Claim 45 depends from claim 43, and thus distinguishes over Smalley for the same reasons as are applicable with respect to claim 43. However, the claim also recites that the friction braking member is in the form of a solid body manufactured from a rubber elastic material which connects the first piston and the second piston. Thus, this claim further distinguishes over Smalley for the reasons as are applicable with respect to claim 35.

#### CLAIMS 47 AND 48 FURTHER DISTINGUISHES OVER SMALLEY

Claims 47 and 48 recite that the cylinder is structured and arranged so as to employ a pneumatic medium or air as the operating fluid. Because the tubular housing 6 of Smalley is not a fluid cylinder, it is not so structured and arranged. As such, these claims even further distinguish over Smalley.

#### CLAIM 49 FURTHER DISTINGUISHES OVER SMALLEY

Claim 49 further requires that the friction braking member be a single body the material of which is squeezed between the first piston and the second piston. Smalley does not squeeze a single body between a first piston and a second piston, however. As such, this claim even further distinguishes over Smalley.

#### CONCLUSION

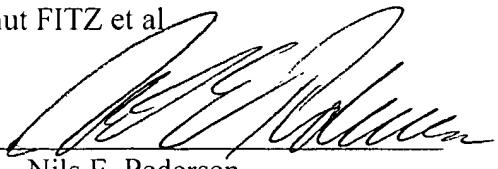
In view of the above it is respectfully submitted to be clear that the Examiner's rejections of claims 22, 32-35, 42-45 and 47-50 must be withdrawn. The Examiner's interpretation of the

claim language is unreasonably broad and against the plain meaning of the terms to one of ordinary skill in the art, and Smalley cannot be interpreted to correspond to the claim language. Accordingly, reversal of all of the rejections based upon this patent is respectfully requested.

Respectfully submitted,

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TO CHARGE ANY DEFICIENCY IN THE  
FEES FOR THIS PAPER TO DEPOSIT  
ACCOUNT NO. 23-0975

## APPENDIX

Claim 22 A braking and damping device, comprising:

    a fluid cylinder having a cylinder wall;  
    two pistons that are arranged so as to be linearly displaceable in said fluid cylinder;  
    a piston rod for displacing one of said two pistons in said fluid cylinder; and  
    an elastically deformable sealing member arranged between said two pistons such that  
when damping occurs by said piston rod displacing the one of said two pistons in said fluid  
cylinder, said elastically deformable sealing member is squeezed between said two pistons and  
pressed against said cylinder wall.

Claim 32 The braking and damping device of claim 22, wherein said cylinder wall comprises  
axially extending grooves positioned so as to permit passage of a pneumatic medium when said  
two pistons are disposed in a front end position of said cylinder.

Claim 33 The braking and damping device of claim 32, wherein the pneumatic medium is air.

Claim 34 The braking and damping device of claim 22, wherein a second of said two pistons  
comprises a seal which seals with said cylinder wall of said cylinder.

Claim 35 The braking and damping device of claim 22, wherein said sealing member  
comprises a solid body made of a rubber elastic material that connects said two pistons.

Claim 42 A braking and damping device for a piece of furniture, comprising:

a fluid cylinder having a cylinder wall, said fluid cylinder being mounted on the piece furniture;

two pistons that are arranged so as to be linearly displaceable in said fluid cylinder;

a piston rod for displacing one of said two pistons in said fluid cylinder, said piston rod being positioned so as to be engageable by a movable part of the piece of furniture; and

an elastically deformable sealing member arranged between said two pistons such that when damping occurs by said piston rod displacing the one of said two pistons in said fluid cylinder, said elastically deformable sealing member is squeezed between said two pistons and pressed against said cylinder wall.

Claim 43 A braking and damping device, comprising:

a fluid cylinder having a cylinder wall;

a first piston and a second piston that are arranged so as to be linearly displaceable in said fluid cylinder along an axis;

a piston rod for displacing said first piston in said fluid cylinder;

wherein said second piston is disposed opposite to said first piston and has a seal sealing said second piston with respect to said cylinder wall;

an elastically deformable friction braking member arranged between said first piston and said second piston such that when damping occurs by said piston rod displacing said first piston in said fluid cylinder, said elastically deformable friction braking member is deformed by being

squeezed between said first piston and said second piston and pressed against said cylinder wall so as to cause damping caused by friction in addition to damping caused by fluid damping.

Claim 44      The braking and damping device of claim 43, wherein said cylinder wall comprises axially extending grooves to permit passage of fluid of said fluid cylinder when said first piston and said second piston are disposed in a front end position in said cylinder.

Claim 45      The braking and damping device of claim 43, wherein said friction braking member is in the form of a solid body manufactured from a rubber elastic material which connects said first piston and said second piston.

Claim 47      The braking and damping device of claim 43, wherein said cylinder is structured and arranged to employ a pneumatic medium as an operating fluid.

Claim 48      The braking and damping device of claim 43, wherein said cylinder is structured and arranged to employ air as the operating fluid.

Claim 49      The braking and damping device of claim 43, wherein said friction braking member is a single body, the material of which is squeezed between said first piston and said second piston.

Claim 50 The braking and damping device of claim 43, wherein said first piston and said second piston are made of a rigid material.